

Lesson Plan Subject: Algebra/Geometry/Physical Science (9th-12th grades)

Lesson Focus: Leadership Activities **Time:** 5 minutes up to 1 hour or more

Guiding Question, Course/Grade Level Expectations, and SPI's are included for Physical Science, Biology, Physics, Algebra 1, Algebra 2, and Geometry. (**See the Standards Spreadsheet.**)

Materials: Toilet Paper Tennis Balls Index Cards
Paper/pencil Hula-Hoops Rope (18" per group)

Preparing the lesson:

1. Select the activities that best suit the needs of your students. Each activity will address a different need and is designed to spark discussion and create awareness.
2. Divide students into small groups, suitable to the selected activity.

Hula Hoop Pass – Ice Breaker, Team Work, Critical Thinking, Cooperation

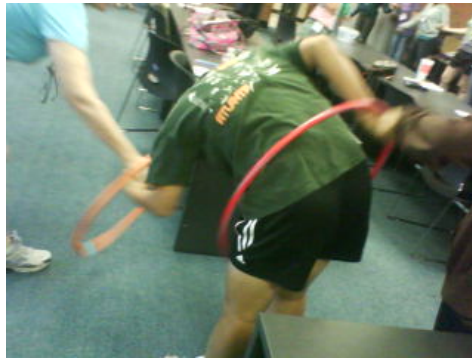
Description

Have the group form a circle holding hands. Ask two people to let go of their grip long enough for them to place their hands through a hula hoop before rejoining them.

The team task is to pass the hula-hoop around the circle in a specified direction until it returns to the starting point.

Another way to play is to use multiple hoops and have them go around the circle in opposite directions.





Helium Hoop Activity – Communication and Placing Blame

<http://www.facilitator.com/gameDisplay.php?id=14>

Number of People: 6 or more

Materials: Hula-hoop or lightweight tent pole

Description: The beauty of this game is its simplicity. Present the group with a hula-hoop. Tell them they must lower the hoop to the ground quickly and evenly. Each member must hold out a finger on each hand. Those fingers must maintain contact with the bottom of the hoop at all times. Hands must stay parallel with the ground and participants cannot hook the hoop/pole. The second the facilitator lets go of the hoop/pole it will start to rise and the participants will start blaming each other. Because it is so lightweight the participants keep trying to push up in order to maintain contact with it. With everyone having the same idea the hoop will rise upward like magic. It's really funny to see the reactions to this phenomenon. I put my scouts through some physical activities prior to using this one. They think it's going to be simple and end up going mad. It's a great activity for going over communication and placing blame. As an added challenge I'll have them lower the hoop around a small orange cone. With our pirate theme the hoop is a key to a magical lock (the cone). I usually place something under the cone that ties to the next activity.

Also Known As: Helium stick, Helium Pole, Helium hoop

How Does it Work?

The stick does not contain helium. The secret (keep it to yourself) is that the collective upwards pressure created by everyone's fingers tends to be greater than the weight of the stick. As a result, the more a group tries, the more the stick tends to 'float' upwards.

Processing Ideas

What was the initial reaction of the group?

How well did the group cope with this challenge?

What skills did it take to be successful as a group?

What creative solutions were suggested and how were they received?

What would an outside observer have seen as the strengths and weaknesses of the group?

What roles did people play?

What did each group member learn about him/her self as an individual?
What other situations (e.g., at school, home or work) are like the Helium Stick?



Human Knot Activity – Ice Breaker, Teamwork, Cooperation, Communication, and Problem Solving

Set up & instructions

Be aware that the activity involves close physical proximity and touch potentially in sensitive places!

Ideal group size is approximately 10, but it can be done with anywhere from about 7 to 16. Much higher or lower and the task doesn't really work. The more in a group, the more difficult the task, partly because of the complexity, and partly because there is physically less room to move.

If there are two or more groups doing the task simultaneously, have the groups reasonably spaced out, so they don't feel distracted by a sense of competition.

Ask participants to form a circle, shoulder-to-shoulder. Encouraging/urging participants to all stand closer can be a subtle way of helping to prepare them for what is about to come. Ask participants to each place a hand in the middle of the circle and to grasp another hand. To emphasize learning of names and get a bit of fun going, ask participants to introduce themselves to the person they are holding hands with.

Then ask participants to put their other hand in the middle, grasp a different person's hand, and introduce themselves.

Don't let participants let go of hands - some will be tempted to think the activity might then be over - but it is only just starting.

Explain to participants that what you'd like them to do is untangle themselves, without letting go of hands, into a circle.

There will be a mixture of reactions, often including nervous laughter, fun amusement, excitement, trepidation, strong suspicion that it can't be done, and others who may view the task as a somewhat sadistic or inappropriate joke. Often some group members will have done the task before, but this doesn't really matter, since each time the task is unique. Participants may change their grip so as to be more comfortable, but they are not to unclasp and re-clasp so as to undo the knot.

If you want name - learning emphasized, then explain that whenever the group is talking to someone, or about someone, that the person's first name must be used. This usually requires supervision and reinforcement by the instructor, but once enforced, is excellent for learning names. It also usually helps the group to work together and find a solution, because their communications are more accurate with names involved.

Stand back and see what happens.



Be prepared to see little progress for quite some time (up to 10 minutes). However, once the initial unfolding happens, the pace towards the final solution usually seems to quicken. However, because each occasion is unique, there are also odd times when a very fast solution falls out - too easy. In such cases, you ask a group to try the task again - its usually a bit harder second time around. Occasionally, the task seems too hard and participants seem to make almost no progress. Let them struggle for about 10 minutes, then you can offer the group one unclasp and re-clasp - they need to discuss and decide what unclasp-reclasp would be most useful.

Most of the time a full circle falls out, but occasionally there are two or even three interlocking circles. So, really the task is to sort the knot out into its simplest structure.



Special instructions for facilitators:

- Slowly wander around the circle, moving in and out as appropriate, e.g., if you want people to use names in every communication, then this needs to be reinforced in a friendly, but firm way, several times.
- It is relatively easy to notice who's talking, who's not, who seems comfortable, who doesn't. Also note that sometimes the natural leaders are not in a good position to lead - do they try to dominate inappropriately or do they sit back appropriately and just do what they can. Sometimes, a new leader emerges from being in an opportune position in the knot. This can offer this person a significant boost. Also, almost everyone gets a positive sense of having played his or her part. Some people have difficulty enjoying the activity due to their uncomfortableness physically (e.g., obese, very tall, or inflexible people may find the activity particularly awkward).
- It is important to provide appropriate help if the activity proves too difficult. This might be encouragement that it can be done (some groups lack confidence and would give up too early), helping a couple of people communicate to find a solution to part of the knot, etc. Or this might be allowing an unclasp-reclasp. How much to give is a fine balancing act. The task should be challenging, but especially as an initial activity, it should give the group some initial confidence and momentum in being able to work together to solve problems.

ABOUT COMMUNICATION:

"Just because you have two ears and a mouth doesn't mean you know how to communicate." — **A Mother's Advice To Her Son**

An important leadership skill is good communication. Communicating does not always mean talking. An important part of good communication is listening to others and taking into account their ideas.

Colors of the Week Activity – Empathy, Respecting opinions of others

Another important leadership skill is to have empathy. Understand that everyone is different and that means everyone thinks differently. People have different likes, dislikes, beliefs, values, and ideas. Although they may be different from yours, that does not mean they are wrong. Listen and respect others in all situations, because their ideas are just as important as yours.

*Number your paper from 1 to 11

* Write down the first color that pops in your head, when you hear the following words:

1. Wednesday
2. Monday
3. Saturday
4. Tuesday
5. Sunday
6. Friday
7. Thursday
8. December
9. August
10. May
11. October

“Colors, like features, follow the changes of the emotions.” - **Pablo Picasso**

Go over the list to compare students’ responses and the meanings of the colors.

(Taken from **The Meaning of Colors** <http://www.color-wheel-pro.com/color-meaning.html>)

RED represents fire and blood, so it is associated with energy, war, danger, strength, power, determination as well as passion, desire, and love.

Light red represents joy, passion, sensitivity, and love.

Pink signifies romance, love, and friendship. It denotes feminine qualities and passiveness.

Dark red is associated with vigor, willpower, rage, anger, leadership, courage, longing, malice, and wrath.

Brown suggests stability and denotes masculine qualities.

Reddish-brown is associated with harvest and fall.

ORANGE represents joy, sunshine, and the tropics. Orange represents enthusiasm, fascination, happiness, creativity, determination, attraction, success, encouragement, and stimulation.

Dark orange can mean deceit and distrust.

Red-orange corresponds to desire, pleasure, domination, aggression, and thirst for action.

Gold evokes the feeling of prestige. The meaning of gold is illumination, wisdom, and wealth. Gold often symbolizes high quality.

YELLOW is associated with joy, happiness, intellect, and energy. Yellow produces a warming effect, arouses cheerfulness, stimulates mental activity, and generates muscle energy

Dull (dingy) yellow represents caution, decay, sickness, and jealousy.

Light yellow is associated with intellect, freshness, and joy.

GREEN means growth, harmony, and freshness. Green has strong emotional correspondence with safety. Dark green is also commonly associated with money. Green suggests stability and endurance.

Dark green is associated with ambition, greed, and jealousy.

Yellow-green can indicate sickness, cowardice, discord, and jealousy.

Aqua is associated with emotional healing and protection.

Olive green is the traditional color of peace.

BLUE is often associated with depth and stability. It symbolizes trust, loyalty, wisdom, confidence, intelligence, faith, truth, and heaven. Avoid using blue when promoting food and cooking, because blue suppresses appetite.

Light blue is associated with health, healing, tranquility, understanding, and softness.

Dark blue represents knowledge, power, integrity, and seriousness.

PURPLE is associated with royalty. It symbolizes power, nobility, luxury, and ambition. It conveys wealth and extravagance. Purple is associated with wisdom, dignity, independence, creativity, mystery, and magic.

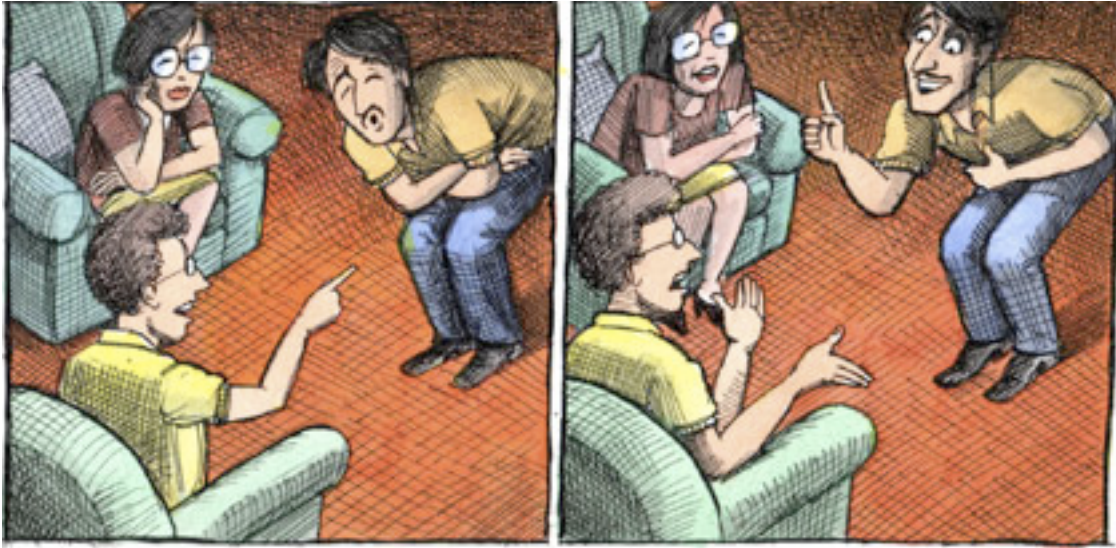
Light purple evokes romantic and nostalgic feelings.

Dark purple evokes gloom and sad feelings. It can cause frustration.

WHITE means light, goodness, innocence, purity, color of perfection, safety, purity, and cleanliness.

BLACK suggests power, elegance, formality, death, evil, and mystery.

CHARADES – Non-Verbal Communication, “Actions speak louder than words”



Provide each student with a card naming a popular movie. Tell them not to show or tell anyone what is written on the card. Have students play a round of Charades with their team. This will be a race between teams to complete the task.

Following the activity, discuss and role-play other examples of non-verbal communication and that people use every day and how they can have positive and negative effects.

Hoop It Up Activity – Cooperation vs. Competition

This activity involves one of four hula hoops placed in each corner of the room, plus a hula hoop in the center. The center hula hoop should be filled with about twenty or so tennis balls. Each of four groups (of any size) is assigned to a hula hoop. The task is for each group to get all of the tennis balls inside their hoop. Give the teams five minutes to work on this task, then call time and give them the opportunity to regroup and plan another strategy before continuing the game. Groups will slowly realize that trying to move balls from one hoop to another is futile: the only way to win is for ALL teams to win: by leaving the balls in the center hoop and then stacking their hoops on top of the central hoop. This game emphasizes the value of cooperation over competition.

Human Overhand Activity

This is perhaps the most challenging game of all. An even number of participants (preferably four or six) must be used. Group members stand in a line, and are connected to one another by holding the ends of an 18 inch length of rope. The object of the activity is for the group to work together to tie a knot in the center length of rope without anyone letting go of the ropes. This activity is much harder than it sounds and can become frustrating for group members. Be sure to allow at least an hour for this activity.

ADDITIONAL RESOURCES

Team Building Activities for Kids: Games to Promote Leadership, Teamwork and Cooperation http://after-school-youth-programming.suite101.com/article.cfm/team_building_activities_for_kids#ixzz0rgYa85gp

Leadership Styles Activity – (4 Corners) <http://www.nwlink.com/~donclark/leader/leadcon.html>

50 MATH AND SCIENCE GAMES FOR LEADERSHIP <http://www.worldscibooks.com/general/6456.html>

Icebreakers - <http://www.manito-wish.org/programs/icebreak.html>